Recap on Fresh Concrete Operations

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1. The following are the fresh concrete operations:
    i. Batching
    ii. Mixing
    iii. Transporting/Handling
    iv. Placing
    v. Compacting
    vi. Curing
    b. Learning the operations of the fresh concrete is important for it allows us to diagnose and improve the process. Although, this process seems obvious once you see it, this process is not common knowledge for the layperson does not look at the specifics as to how concrete is made.
2. Mixing is a process that needs care and is commonly done with a machine but could also be done by hand.
    a. Mixing by machine is preferred since it is easier and is much less prone to mistakes. It should be noted however, that concrete could be better mixed by hand instead of a machine if the person mixing does not know how to use the machine. Tilting drum mixers and pan type mixers are the preferred type of mixers.
3. The preferred mixing time for concrete is between 2 and 30 minutes.
    a. A mixing time of less than 2 minutes would make the concrete not strong for the aggregates have no chance of being sufficiently well mixed so that they would be considered well-graded and the amount of concrete and aggregate in one area would vary from the other, thereby giving everchanging water requirements throughout the concrete – something that is better solved by simply mixing the concrete and aggregates from different areas together. A mixing time of greater than 30 minutes would be prone to water losses due to evaporation. Until the loss of compressive strength due to evaporation is greater than the gain caused by making the grade of the concrete better, mixing the concrete for longer makes the concrete able to handle greater compressive stresses.
4. Water lost during transportation is significant for all but short distances.
    a. Transit mixers and agitator trucks add water to ensure that the concrete would still have the water concrete be as planned. Agitator trucks even agitate the concrete while in transit so that entrapped air would be lessened once the concrete arrives.
5. Ready mixed concrete is an easier but more expensive option.
    a. Ready mixed concrete is convenient when small quantities of concrete or intermittent mixing is needed; however, there is less control on the workability of the concrete at the time that you are placing the concrete and the cost of the concrete would be higher. Ready mixed concrete also allows a closer quality control for the batching and would allow the use on concrete on sites where there is not so much plot of land that you could simply allocate a part of them just to mix your concrete.